// Signed Mantissa and Signed Exponent

START: LXI SP,4000H

LXI H,2000 // Initializing HL Register Pair

MOV A,M

ADI 00

JM REMOVINGONE

JP CONTINUE1

REMOVINGONE: ADI 80H

CMC

MOV M,A

MVI E,01H

CONTINUE1: MOV B,M

INX H

PUSH H

MOV A,M

ADI 00

JM REMOVINGONE2

JP CONTINUE2

REMOVINGONE2: ADI 80H

CMC

MOV M,A

MVI A,01H

STA C020

CONTINUE2: XRA A

MOV C,A

LOOP: ADD M

JNC SKIP

INR C

SKIP: DCR B

JNZ LOOP

MOV B,C

RAL

JNC CONTINUE3

JC CONTINUE4

CONTINUE3: STC

CMC

MOV A,B

RAL // Representing the mantissa in 1.7 Format

MOV B,A

MVI C,00

JMP CHECKINGNANDP

CONTINUE4: STC

CMC

MOV A,B

RAL // Representing the mantissa in 1.7 Format

MVI A,01H

MOV B,A

MVI C,00

CHECKINGNANDP: LDA C020

CMP E

JZ EXPONENT

JNZ NEGATIVE

NEGATIVE: MOV A,B

ADI 80H

MOV B,A

EXPONENT: INX H // HL = 2002

PUSH H

MOV A,M

ADI 00 // Checking if exponent is negative

JM 1COMP

JP NEXTEXPO

1COMP: CMA

ADI 01

ADI F8

MOV M,A

NEXTEXPO: INX H

MOV A,M

ADI 00 // Checking if exponent is negative

JM 2COMP

JP SUMMING

2COMP: CMA

ADI 01

ADI F8

SUMMING:

POP H

ADD M

ADI 00 // ADDing if SUM is negative

JM SUMCOMP

MOV C,A

MVI A,00

HLT

SUMCOMP: CMA

ADI 01

ADI F8

MOV C,A

MVI A,00

HLT

# ORG 2000H

# DB 90H,60H,FBH,FCH